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CONFIDENTIAL BUSINESS INFORMATION SUBJECT TO PROTECTIVE ORDER

UNITED STATES DISTRICT COURT WESTERN DISTRICT OF WASHINGTON AT SEATTLE

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MICROSOFT CORPORATION,	CASE NO. C10-1823JLR
Plaintiff,	
v.	
MOTOROLA, INC., et al.,	
Defendants.	

EXPERT REPORT OF GREGORY K. LEONARD, PH.D.

I. QUALIFICATIONS AND ASSIGNMENT

- 1. I am an economist and Partner at Edgeworth Economics, 333 Bush Street, Suite 1450, San Francisco, CA, 94104. I received an Sc.B. in Applied Mathematics-Economics from Brown University in 1985 and a Ph.D. in Economics from the Massachusetts Institute of Technology in 1989. Prior to joining Edgeworth Economics, I was a senior vice president at NERA Economic Consulting; prior to that, I was a senior vice president with Lexecon Inc.; prior to that, I was a founding member and director of Cambridge Economics, Inc.; prior to that, I was an assistant professor at Columbia University.
- 2. My specialties within economics are applied microeconomics, the study of the behavior of consumers and firms, and econometrics, the application of statistical methods to economics data.
- 3. I have extensive experience with the economics of intellectual property. I have published over fifty articles in scholarly and professional publications, which are listed on my curriculum vitae, attached as Exhibit A. A number of my articles address intellectual property issues, including articles appearing in the Journal of Econometrics, the Berkeley Technology Law Journal, and the Columbia Science and Technology Review. I co-edited a book entitled Economic Approaches to Intellectual Property: Policy, Litigation, and Management and co-authored several of its chapters.
- 4. I have authored a number of articles relating to competition and antitrust issues, including articles appearing in the RAND Journal of Economics, the Journal of Industrial Economics, Annales d'Economie et de Statistique, Antitrust Law Journal, International Journal of Industrial Organization, European Competition Law Review, Antitrust, Antitrust Source,

Antitrust Chronicle, BE Journal of Economic Analysis & Policy, and the International Journal of the Economics of Business.

- 5. I contributed chapters to the American Bar Association Section of Antitrust Law (ABA-SAL) books *Econometrics*, *Issues in Competition Law and Policy*, and *Proving Antitrust Damages: Legal and Economic Issues*.
- 6. In 2009, I was asked by the Federal Trade Commission (FTC) to serve as a panelist on the issue of patent damages during its hearings on the Evolving IP Marketplace. The subsequent FTC report issued in 2011 cited my comments in a number of instances. My work on patent damages was also cited by the Court of Appeals for the Federal Circuit in its *Uniloc* decision. In 2005, I served as a consultant to and testified before the Antitrust Modernization Commission. I have given invited presentations on antitrust and intellectual property issues to the U.S. Department of Justice, the Federal Trade Commission, the Japan Fair Trade Commission, the Ministry of Commerce of the People's Republic of China, and the Supreme People's Court of the People's Republic of China.
- 7. I have advised entities involved in intellectual property licensing negotiations, including negotiations over the royalties to be paid on standards-essential patents. In my consulting work on patent litigation, I have reviewed hundreds of license agreements and, in many cases, documents related to the negotiations that led to those agreements.
- 8. I have served as a referee for numerous scholarly journals and am a senior editor for the ABA-SAL publication *Antitrust Law Journal*.
- 9. I previously have been retained by the U.S. Department of Justice to provide economic analysis on antitrust issues. I have previously served as an expert witness in a number of cases and have provided live testimony at trial in twenty cases. A complete list of cases in 01980.62689/5340640.1

which I have testified (in deposition or at trial) is provided in my *curriculum vitae*. My hourly billing rate for this matter is \$700. My compensation does not depend on the opinions I express or the outcome of this litigation.

10. I have been asked by counsel for defendants (collectively, "Motorola") to analyze whether Motorola violated its RAND commitment in two letters, dated October 21, 2010 and October 29, 2010 ("the October letters"), that it sent to Microsoft, Inc. ("Microsoft") offering to license Motorola's 802.11 and H.264 "standards essential" patent portfolios. In the course of my analysis, I have reviewed the documents and other information listed in Exhibit B to this report. I reserve the right to update my opinions should more relevant information become available in the future.

II. SUMMARY OF OPINIONS

11. Based on my review of the record, my economic analysis, and my experience, I conclude that Motorola made the opening offers to Microsoft in the October letters in good faith.

III. PARTIES

A. Microsoft

- 12. Microsoft develops and sells software for use on personal computers, servers, cellular handsets, and other devices and certain types of hardware. Two of the products at issue in this case are the Windows operating system and the Xbox gaming system.
- 13. Microsoft has a substantial patent portfolio containing over 40,000 patents worldwide. Microsoft has an intellectual property licensing group to handle licensing activities

¹ "Microsoft Patent List March 23, 2013.csv," available at http://www.microsoft.com/global/en-us/legal/RichMedia/Patterns/Microsoft%20Patent%20List%20March%2025%202013.csv, accessed May 20, 2013.

and has developed several intellectual property licensing programs.² Microsoft has extensive experience licensing its patents.³ Microsoft has also in-licensed the patents of other patent owners.⁴

14. Microsoft has participated in and contributed technology to organizations that set industry standards.⁵ Microsoft joined the MPEG-LA patent pool (which licenses H.264 SEPs) as a licensor in July 2004.⁶ In the MPEG-LA pool, many of the individual members are manufacturers of products that practice the H.264 standard.⁷

B. Motorola

- 15. At the time the October letters were sent, Motorola, Inc. had as subsidiaries Motorola Mobility, Motorola Solutions, and General Instrument. Subsequently, Motorola Mobility and General Instrument were spun off as separate companies and later acquired by Google Inc. Because these ownership and corporate structure changes occurred after the events that are at issue in this case, I will generally refer to the defendants collectively as "Motorola."
- 16. Motorola has a long history of developing technologies, implementing those technologies in its own products, and licensing the technologies to other manufacturers.

² http://www.microsoft.com/en-us/legal/IntellectualProperty/IPLicensing/Default.aspx, accessed May 20, 2013.

³ http://www.microsoft.com/en-us/legal/IntellectualProperty/IPLicensing/Policy.aspx, accessed May 20, 2013 ("Microsoft has a history of licensing out patents under fair and reasonable terms to companies that respect Microsoft intellectual property rights").

⁴ Gutierrez Dep. II, pp. 125-126.

⁵ http://www.microsoft.com/en-us/legal/IntellectualProperty/IPLicensing/Policy.aspx, accessed May 20, 2013.

⁶ Findings of Fact and Conclusions of Law, April 25, 2013 ("RAND Order"), ¶ 486.

⁷ http://www.mpegla.com/main/programs/AVC/Pages/Licensors.aspx, accessed May 29, 2013. 01980.62689/5340640.1

Motorola developed the first cellular phone, which was introduced in 1983⁸, and subsequently built what is widely recognized (including by the Court in its RAND Order⁹) as a strong patent portfolio in cellular technologies. Motorola holds hundreds of patents in the field, reflecting its investment in research and development over the years. Motorola's cellular portfolio contains a number of "standards-essential" patents ("SEPs"), i.e., patents that are thought to be necessary to practice one or more of the industry standards for cellular communications.

- 17. Over the course of its long history in the cellular industry, Motorola has licensed its cellular SEP portfolio on numerous occasions to numerous manufacturers of cellular handsets and infrastructure equipment. Each of these license agreements was reached after a bilateral negotiation between Motorola and the manufacturer in question. Indeed, in the case of some manufacturers

 Motorola has negotiated one or more follow-on agreements after the initial agreement had expired.
- 18. Motorola's development, implementation, and licensing of technology are not limited to the cellular communications area. Motorola also owns patents that cover technologies in areas such as 802.11 WiFi and H.264 video compression. Motorola's SEPs in these areas are at issue in this case.
- 19. Motorola has actively participated in and contributed technologies to the organizations that set industry standards for cellular communications, WiFi, and H.264 video compression. As part of its participation in these organizations, Motorola has committed to

⁸ http://news.cnet.com/8301-1035 3-57577704-94/the-first-call-from-a-cell-phone-was-made-40-years-ago-today/, accessed May 29, 2013.

⁹ RAND Order ¶ 430.

¹⁰ Some of the agreements were negotiated after litigation had been initiated, but the threat of litigation to enforce the patent property right must, at some level, underlie any patent license negotiation.

license its patents essential to those standards under FRAND/RAND terms. ¹¹ Motorola did not join either the MPEG-LA (H.264) patent pool or the Via 802.11 patent pool. ¹²

IV. INDUSTRY BACKGROUND

A. Smartphones

20. A "smartphone" is a cellular handset that incorporates other functionalities such as email, a calendar, a camera, internet browsing, etc. Smartphones were introduced in the late 1990s and were increasingly prevalent in the early to mid-2000s. By mid-2007, several smartphone models were available in the United States, including Blackberry devices and the Motorola Q. The Motorola Q ran Microsoft's operating system for mobile devices, known as Windows Mobile. However, the subsequent rapid growth in smartphone sales was driven by two events: the introduction of Apple's iPhone in June 2007 and the introduction of Android-based smartphones starting in October 2008. Android was adopted by HTC, Samsung, Motorola, and LG, among others. After adopting Android, Motorola dropped Windows Mobile for use in its smartphones. As a general matter, Windows Mobile was not widely adopted by smartphone manufacturers. For example, as of 2010, Windows Mobile's share of worldwide smartphone sales was only 4.2 percent. A second of the same of the same produced in the late and the late and

B. WiFi

¹¹ RAND Order, p. 3.

¹² RAND Order ¶¶ 487, 549.

¹³ http://www.pcmag.com/article2/0,2817,1967188,00.asp?kc=PCRSS02129TX1K0000530, accessed May 23, 2013.

http://www.gartner.com/newsroom/id/1543014, accessed May 20, 2013.

- 21. As mentioned above, smartphones provide various functionalities in addition to the core cellular functionality in one device. WiFi is one such functionality. The industry standard covering WiFi is called 802.11.
- 22. In cellular handsets, WiFi is used to transfer information, particularly data, between the handset and another device or an internet connection. As of 2010, WiFi transfer rates were generally faster than the transfer rates that could be achieved on cellular networks. In addition, a user could in some circumstances avoid the possibility of additional cellular service charges by using WiFi.
- 23. As of October 2010, WiFi functionality was a relatively recent addition to the cellular handset area.¹⁵ Non-smartphones typically did not offer WiFi capability. In the smartphone segment, the iPhone had WiFi from its introduction in June 2007 and Android smartphones generally had WiFi capability from their introduction in October 2008, while RIM did not add WiFi capability to all of its Blackberry devices until 2009.¹⁶
- 24. WiFi is used in many other contexts where an internet connection is desirable, but it is inconvenient or costly to use a hardwired connection. In addition to personal computers, an example is Microsoft's XBox. If the XBox is located in a different location than the user's internet connection, it may be more convenient to use WiFi rather than running a cable between

¹⁵ Dailey Dep., p. 17.

http://www.brighthand.com/default.asp?newsID=13186; http://www.apple.com/pr/library/2007/01/09Apple-Reinvents-the-Phone-with-iPhone.html; http://reviews.cnet.com/smartphones/t-mobile-g1-black/4505-6452_7-33283585.html; http://www.thephonedatabase.com/BlackBerry_Storm_9500_168_Cell_Phone; http://asia.cnet.com/product/blackberry-storm-9500-44126647.htm; http://reviews.cnet.com/smartphones/blackberry-pearl-8110-red/4505-6452_7-32956369.html; all accessed May 29, 2013.

the locations. Xbox users use an internet connection, for example, to connect to Xbox Live, which is Microsoft's online service for Xbox.¹⁷

C. H.264

- 25. H.264 is a standard for compression of video adopted in 2003.¹⁸ Compression speeds up the transmission and thus distribution of video content from the internet to a device such as a smartphone. The iPhone has had H.264 functionality since its introduction, as have Android smartphones. Feature phones do not generally have H.264 functionality. Thus, as with WiFi, H.264 was a relatively recent addition to the cellphone area as of October 2010.
- 26. H.264 is used to distribute video to various devices beyond smartphones, including personal computers, tablets, and gaming consoles. An example of the latter is Microsoft's Xbox.

V. PATENT LICENSING

- 27. Patent licensing is a common activity, particularly in high tech industries such as smartphones. Patent owners license their patents to obtain royalty revenues and to achieve freedom of operation. Royalty revenues contribute to the return that a patent owner derives from investing in research and development that leads to commercially useful technology. A product manufacturer takes a license to a patent in order to use the patented technology as opposed to doing without the patented technology or using some alternative technology.
- 28. A patent license agreement specifies the terms and conditions of the license. It is typically reached through a bilateral negotiation between the patent owner and the potential licensee over those terms and conditions.

http://www.xbox.com/en-US/live, accessed May 20, 2013.

http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=6312, accessed May 29, 2013.

- 29. An important characteristic of many patent license negotiations, and indeed many negotiations in general, is that each party starts off the negotiation process with incomplete information as to the bargaining position of the other. An important role of the negotiation is for the parties to exchange information about their bargaining positions.¹⁹
- 30. The strength of a potential licensee's bargaining position depends on the nature of its products and business (including sales levels, geographic distribution of sales, profitability, etc.), the use that it makes of the patented technology, the existence and suitability of potential design-arounds for or alternatives to the patented technology, other indicators of the value of the patented technology, the arguments it has against infringement, the arguments it has against patent validity, etc.
- 31. In some licensing negotiations, the licensor is the owner of patents that it claims are "essential" to practicing a particular industry standard. The licensor may have committed to the standard-setting organization to license any essential patents on "reasonable and non-discriminatory" (RAND) terms.²⁰
- 32. The parties may have preferences as to the structure of the royalty payments. For example, a potential licensee may prefer to pay a lump sum, one-time royalty payment.

 Alternatively, the potential licensee may prefer to have a cap on the per unit royalty that it will have to pay. The parties may prefer to exchange other forms of consideration, such as entering into a supply agreement or other ongoing business relationship in connection with a patent

¹⁹ Kowalski Dep., p. 24, 31; Trial Transcript, Day 6, pp. 118-121 (Dailey).

²⁰ Such a commitment may be a condition of participation in the standard-setting organization. The commitment is often made through submitting a "letter of assurance," in which the company agrees that it will license any essential patents on RAND terms.

license.²¹ The parties may prefer to enter into a cross license where the potential licensee also licenses its patents to the patent owner and one party pays a "balancing" royalty payment to the other. Preferences about terms and conditions are another type of information that is exchanged between the parties during a licensing negotiation.

- 33. Of course, each party has the incentive to provide information that strengthens its bargaining position, while avoiding disclosure of information that weakens its bargaining position. A party (even an SEP owner with a RAND commitment) does not have an obligation to bargain against itself by helping the counterparty make its best arguments. Because of the back and forth that may occur, licensing negotiations may require a significant period of time before an agreement is reached and, even then, each side will not have full information about the other's positions. The time to negotiate an agreement may be further extended if the agreement has complex terms and conditions that need to be worked out between the parties.
- 34. The parties to a negotiation will typically balance the expected costs and benefits of further information exchange and continued negotiations. Thus, for example, it is common that, in the case of a large patent portfolio, the patent owner will present the potential licensee with claim charts for a relatively small subset of patents in the portfolio, at least initially. The incremental benefit of creating claim charts for all of the patents in the portfolio may not be worth the incremental costs unless it turns out that, for example, the potential licensee has strong arguments against infringement of the claim-charted patents. The parties balancing the expected costs and benefits of further information exchange is another reason why many licensing

²¹ See e.g.,

http://www.barnesandnobleinc.com/press releases/4 30 12 bn microsoft strategic partnership.html, accessed May 29, 2013.

negotiations reach a conclusion without each party having obtained full information about the other.

- 35. It is common in my experience for the patent owner to make the opening royalty offer. The potential licensee may respond with arguments as to why the opening offer is too high, may present a counteroffer, may try to change the structure of the licensing agreement (for example, by requesting a lump sum royalty as opposed to a running royalty), or all of the above. The patent owner may respond with its own arguments or counteroffers, and so on. It is common in my experience for negotiations to go through multiple rounds of information exchange and offers before an agreement is reached. It is rare for a licensor to make a "take it or leave it" demand as an initial offer; instead, both parties expect to have a negotiation.

 Negotiating a license agreement is attractive because the alternative, litigation, is costly and often entails risks for both parties.
- 36. Cross licensing is a common and pro-competitive licensing practice. A cross license allows each party to go forth and compete in the marketplace without fear of infringing the other party's patents. Often, a "balancing" royalty payment will be made by one party to the other. The direction and size of the balancing royalty payment will depend on the relative values of the two parties' portfolios and their relative market sales. For example, suppose a patent owner enters into a license with Licensee A, who has no patents of its own to license, at a negotiated royalty of 3%. If the patent owner enters into a second license with Licensee B, who is otherwise similar to Licensee A, but has a valuable portfolio of patents to cross license, the negotiated royalty rate is likely to be less than 3% as long as the patent owner receives a cross license to Licensee B's patents. The more valuable Licensee B's patents are to the patent owner, the lower will be the royalty rate that they negotiate. In addition, the parties' marketplace

positions with respect to the products at issue at the time of negotiation, and their respective predictions about their future marketplace position, may also affect the terms of a final agreement.

VI. PATENT POOLS

- 37. A patent pool is formed when two or more patent holders combine their patents into a single portfolio (the "pool"), which is then offered out to be licensed, typically by a "pool administrator." Typically, the pool administrator sets a fixed royalty rate that applies to all licensees, whether or not they are similarly situated. Each contributor to the patent pool receives a share of the royalty payments received (after the pool administrator's expenses and other deductions have been accounted for). A contributor's share of the royalties is often proportional (either directly or with some adjustments) to the contributor's share of the total number of patents in the pool. For example, with direct proportionality, if a contributor was responsible for 20% of the patents in the pool, that contributor will receive 20% of the royalty revenues (after expenses).
- 38. A patent pool differs in economically significant ways from a single patent holder with a patent portfolio. First, companies that contribute patents to the pool do so by choice. They choose to join because they expect to receive a greater overall benefit from participating in the pool than they could obtain from engaging in bilateral negotiations on their own. Because many contributors to patent pools are also manufacturers that need licenses to other patent owners' standard-essential patents, part of the benefit received by a contributor to a pool is a license to the other patents in the pool. Second, because there is typically a set royalty rate for each pool, there is no negotiation between parties when licensing patents in patent pools. As mentioned above, differently situated licensees pay the same rate. Third, when royalty revenues

are allocated among contributors using a proportional method, patents that may be more valuable to the standard or to a product do not receive greater royalties. Each patent is given an equal share of the royalties. In contrast, in a bilateral negotiation, royalties for a given patent may differ from licensee to licensee depending on the value of a patented technology to the licensees and may differ from patent to patent depending on the value of the patents. On the other hand, transactional costs are lower with a patent pool because there is no negotiation, which means that the royalty rate in a pool may be lower, all else equal. These differences between a pool and a single licensor suggest that companies that contribute to pools tend to be those companies that have relatively less valuable patents and derive relatively greater value from use of the technology covered by the patents of other contributors.²²

VII. PROCEDURAL BACKGROUND

- 39. I understand that Motorola had a license to Microsoft's ActiveSync patents which expired in 2007.²³ The parties engaged in negotiations for a renewal of Motorola's ActiveSync license for approximately three years, from 2007 to 2010. During this same time period—in 2009—Motorola adopted Android and stopped manufacturing smartphones that used the Windows Mobile operating system. During the course of the parties' negotiations, Motorola advised Microsoft that it had patents which read on Microsoft's products.²⁴
- 40. In late January 2010, Microsoft and Motorola engaged in a discussion via teleconference to discuss licensing the ActiveSync patents. During that discussion, Motorola

²² RAND Order ¶¶ 499-503.

²³ Gutierrez Dep. II (rough), p. 75.

²⁴ Gutierrez Dep. II (rough), p. 69.

asked to negotiate a broader cross-license between the two companies, but Microsoft refused, saying that they would only execute a one-way license for its ActiveSync patents.²⁵

- 41. In May 2010, I understand that Motorola's VP of Intellectual Property, Kirk Dailey, attended an IP Symposium at George Washington University Law School and served on a panel with Microsoft's Associate General Counsel, Jeff Ranck.²⁶ According to Mr. Dailey, he attended this symposium in part to meet Mr. Ranck.²⁷ Mr. Dailey and Mr. Ranck intended to engage in licensing discussions, but the meeting kept being rescheduled until it finally occurred in October 2010.²⁸
- 42. On October 1, 2010, Microsoft unexpectedly filed a complaint in the ITC, alleging unfair trade competition due to alleged infringement of certain Microsoft patents by Motorola's smartphones ("ITC-744 action"). Microsoft sought an exclusion order that would preclude Motorola from importing allegedly infringing smartphones. On the same day, Microsoft filed a patent infringement action against Motorola in the U.S. District Court for the Western District of Washington, asserting infringement of the same patents at issue before the ITC ("1577 action"). Microsoft sought, among other things, injunctive relief. I understand that in these two actions, Microsoft asserted its ActiveSync patents against Motorola, as well as

²⁵ Interview of Kirk Dailey, May 29, 2013.

²⁶ Interview of Kirk Dailey, May 29, 2013.

²⁷ Interview of Kirk Dailey, May 29, 2013.

²⁸ Interview of Kirk Dailey, May 29, 2013.

²⁹ Verified Complaint of Microsoft Corporation, In the Matter of Certain Mobile Devices, Associated Software, and Components Thereof, Inv. No. 337-TA-744, October 1, 2010; Gutierrez Dep. II (rough), p. 25.

³⁰ Gutierrez Dep. II (rough), p. 92.

³¹ Complaint for Patent Infringement, Case 2:10-cv-01577-RSM, October 1, 2010; Gutierrez Dep. II (rough), p. 26.

additional patents which had not been the subject of prior negotiations between the parties.³² Microsoft filed these actions without ever offering Motorola a license to all of the patents asserted in those actions.

- 43. On October 4, 2010, Microsoft pre-announced the October 11, 2010 launch of Windows Phone 7.³³
- 44. I also understand that after Microsoft filed these actions, Microsoft told Motorola that it was interested in finding a resolution of the parties' dispute that would cover both parties' intellectual property, and that it was interested in discussing a cross-license agreement.

 Microsoft invited Motorola to present its patents for discussion.³⁴
- 45. As discussed above, it is common for a company that is presented with patents by a potential licensor to present its own patents for consideration and discussion of a potential patent cross license agreement. Here, Microsoft invited Motorola to do exactly that.³⁵
- 46. Following Microsoft's filing of its actions in the ITC-744 action and 1577 action, Microsoft and Motorola finally scheduled the meeting they had been trying to schedule for several months to discuss a potential broad patent cross-license for October 22, 2010.³⁶
- 47. On October 21, 2010, in advance of the scheduled meeting, Motorola's VP of Intellectual Property, Kirk Dailey, sent Microsoft's VP and Deputy General Counsel, Horacio

³² Gutierrez Dep. II (rough), pp. 21, 26.

http://www.techspot.com/news/40502-microsoft-confirms-windows-phone-7-launchdate.html, accessed May 29, 2013.

³⁴ Gutierrez Dep. II (rough), p. 76.

³⁵ Gutierrez Dep. II (rough), p. 76. It is also common for a company that is the subject of a patent infringement lawsuit to assert its own patent portfolio against the other party as a defensive measure and to encourage a broader settlement.

³⁶ Gutierrez Dep. II, p. 89; Interview of Kirk Dailey, May 29, 2013. 01980.62689/5340640.1

Gutierrez, an offer to grant Microsoft a worldwide license to Motorola's portfolio of patents and patent applications relating to the IEEE 802.11 standards.³⁷ The letter included an annex that identified Motorola's patents that Motorola believed to be essential to the 802.11 standard. The letter included Motorola's offer to grant the license under reasonable and non-discriminatory terms and conditions. Motorola offered a royalty rate of 2.25% of the price per unit for each unit sold by Microsoft. The letter also stated that the offer was subject to a grant back license (cross license) under Microsoft's 802.11 essential patents. Motorola also offered to license less than its entire portfolio of 802.11 essential patents on RAND terms.

- 48. According to Mr. Dailey, the request for a cross license was part of Motorola's usual practice to decrease the royalty rate if the other party agreed to cross license its patents. The offer was left open for 20 days, which I understand from Mr. Dailey was Motorola's standard practice³⁸ as a way to move the negotiations along; it was not meant to be an "exploding" offer or a "take-it-or-leave it" offer. Instead, it was a way to try to encourage the other side to give a prompt response.
- 49. According to Mr. Gutierrez, Microsoft received the October 21, 2010 letter on the morning of October 22, 2010. He forwarded the letter immediately to Microsoft's litigation counsel. Although the parties met in person later that day to discuss a resolution of the parties' disputes, the parties did not discuss the October 21 letter. In particular, Microsoft did not ask for any clarification of any of the terms in the October 21 letter.³⁹

³⁷ MOTM WASH1823 0018476-97; Trial Transcript, Day 6, p. 36 (Dailey).

³⁸ Trial Transcript, Day 6, p. 76 (Dailey).

³⁹ Gutierrez Dep. II (rough), p. 60.

- 50. On October 29, 2010, Motorola sent Microsoft another letter, which offered to grant Microsoft a worldwide license to Motorola's portfolio of patents and patent applications relating to the ITU-T Recommendation H.264. Like the previous letter, this letter included an annex identifying Motorola's patents that are essential to the H.264 standard. This letter also offered to grant the license under reasonable and non-discriminatory terms and conditions and specified an offer of a 2.25% royalty rate per unit. This offer was subject to a cross license under Microsoft's H.264 essential patents. Again, according to Mr. Dailey, if Microsoft had agreed to a cross license, the royalty rate would have been reduced by an amount to be determined that would depend on the value of Microsoft's patents. Motorola also offered to license less than its entire portfolio of H.264 essential patents, on RAND terms. The same 20 day period was given in this letter, as well, which again I understand to have been a way to facilitate a prompt response.⁴⁰
- 51. In the Patent Declarations Motorola submitted related to the H.264 patents, there was an option for granting licenses based on "reciprocity." Motorola selected that option, which indicates that Motorola wanted to license its patents on the condition that the other party cross license its own H.264 essential patents to Motorola.⁴¹
- 52. Based on Mr. Dailey's testimony, I understand that, Motorola does not stack royalties for its SEP portfolios.⁴² Thus, Motorola's offer for a license to both its 802.11 and H.264 portfolios would have been a royalty rate of 2.25%, not a combined 4.5%.

⁴⁰ MOTM WASH1823 0018498-521 at 498.

⁴¹ MOTM_WASH1823_0000035-77 at 36.

⁴² Trial Transcript, Day 6, p. 66 (Dailey).

- 53. I understand that Microsoft has also committed to the relevant SSOs that it will license its SEPs on RAND terms. I also understand that in connection with investigations of Microsoft by the U.S. Department of Justice and European Commission, Microsoft committed to license certain of its patents on reasonable and non-discriminatory terms. 43
- 54. Without having made a counteroffer, or any other response, to Motorola's opening offers in its October 21 and October 29 letters, Microsoft filed the present lawsuit on November 9, 2010, alleging Motorola violated its RAND commitments by sending the October letters.⁴⁴
- 55. I also understand that Microsoft has told the Court it will take a RAND license for Motorola's entire portfolios, and not just for a subset of patents. In my experience, it is typical for a licensee to license an entire portfolio of SEPs, as all the patents may be necessary to practice the standard. On November 10, 2010, Motorola filed two patent infringement lawsuits against Microsoft in the U.S. District Court for the Western District of Wisconsin (the "699 action" and the "700 action"). ⁴⁵ On November 22, 2010, Motorola filed a complaint in the ITC alleging patent infringement (the "ITC-752 action"). In July 2011, Motorola filed patent infringement actions against Microsoft in Germany. Motorola sought an exclusionary order in

⁴³ Gutierrez Dep. II, pp. 27-28. While some of these patents may not be essential to an industry standard set by an SSO, they are essential to standards developed by Microsoft, such as ActiveSync.

⁴⁴ Dailey Dep., p. 27; Gutierrez Dep. II, pp. 144-150.

⁴⁵ I understand that these actions were transferred to the U.S. District Court for the Western District of Washington and subsequently consolidated with this case.

the ITC, and among other things, injunctive relief in the U.S. District Court and the German court.⁴⁶

- 56. In March 2012, Microsoft filed a motion with the Court in this action for a temporary restraining order to prevent Motorola from enforcing an injunction against certain Microsoft products in Germany. The Court granted this request and then converted the order into a preliminary injunction in May 2012.⁴⁷ In November 2012, the Court granted Microsoft's Motion to Dismiss Motorola's claim for injunctive relief.⁴⁸
- 57. I understand that in June 2012, Microsoft relocated its EMEA distribution facilities from Germany to the Netherlands.⁴⁹
- 58. In November 2012, the Court in this action held a trial to determine the RAND rates and ranges for Motorola's 802.11 and H.264 SEP portfolios with respect to Microsoft, but not discussing other terms and conditions of a RAND license. On April 19, 2013, the Court issued its order determining the RAND rates and ranges: (1) a RAND rate of 3.471 cents per unit for Motorola's 802.11 SEPs, with a range of 0.8 cents to 19.5 cents per unit, and (2) a RAND rate of 0.555 cents per unit for Motorola's H.264 SEPs, with a range of 0.555 cents to 16.389 cents per unit.

Verified Complaint, In the Matter of Certain Gaming and Entertainment Consoles, Related Software, and Components Thereof, Inv. No.337-TA-752, November 22, 2010; Complaint for Patent Infringement, Civil Action No. 10-cv-699, November 10, 2010; Microsoft Corp.'s April 12, 2013 Supplemental Disclosures Pursuant to Federal Rule of Civil Procedure 26(a)(1)(A)(i) and (iii); http://www.bbc.co.uk/news/technology-17924190, accessed May 29, 2013.

http://www.bbc.co.uk/news/technology-17924190, accessed May 29, 2013.

⁴⁸ Order Granting Microsoft's Motion Dismissing Motorola's Claims for Injunctive Relief, Dkt. No. 607.

⁴⁹ Microsoft's Supplemental Response to Interrogatory No. 4.

⁵⁰ RAND Order, p. 207.

VIII. MOTOROLA'S OPENING OFFER WAS MADE IN GOOD FAITH

- 59. In its RAND Order, the Court stated:⁵¹
- "[T]he Court interpreted Motorola's commitments to the ITU and IEEE as requiring initial offers by Motorola to license its SEPs to be made in good faith"
- "However, the court has also held that initial offers do not have to be on RAND terms so long as a RAND license eventually issues"
- "To decide whether Motorola's opening offers were in good faith, a fact-finder must be able to compare them with a reasonable RAND royalty rate and, because more than one rate could conceivably be RAND, a reasonable RAND royalty rate range."
- 60. I use these statements to form the legal framework for my economic analysis. In particular, I take these statements to mean that an opening offer within the RAND range would be considered to be in good faith, but that a good faith opening offer need not be within the RAND range. Since Motorola's opening offer was outside the RAND ranges later set by the Court, the question remains whether Motorola's opening offer was made in good faith. As an economist, it is my opinion that an opening offer is made in good faith if it meant to be the start of a negotiation through which the parties can reach a RAND license.
- 61. Based on the record, my experience with patent licensing, and the application of economic principles, I conclude that Motorola was acting in good faith when it made its opening offers to Microsoft for the reasons discussed below.

A. Motorola Had Limited Information on Which to Base Its Opening Offers

62. It is important to note that the Court's RAND determination was made after a five day hearing, which was preceded by an extensive discovery process during which substantial numbers of documents were exchanged, witnesses from both parties were deposed, and

⁵¹ RAND Order, p. 5.

technical, economic, and licensing experts submitted reports and were deposed. Thus, in making its determination of a RAND royalty, the Court had access to substantial information on, among other things, the nature of Motorola's technology and its relation to the standard, the use of the Motorola technology in Microsoft's products, the nature of Microsoft's business, the extent of participation of other companies in the standard, and various licensing agreements, patent pools, and other analyses that might have been relevant.⁵² In addition, each company presented their best arguments in a coherent and organized fashion to the Court.

- 63. As a general matter, in my experience, it would be extraordinary for the parties in a patent licensing negotiation to have available to them the level of information that was available to the Court in this case. This statement would apply at the conclusion of a negotiation, let alone at the very beginning.
- 64. In particular, when it made its opening offers, Motorola did not have the benefit of the knowledge that was developed through this legal proceeding. While Motorola was presumably aware of the nature of its own technology in isolation, it was not fully aware of how the technology was used in the Microsoft products⁵³ or the nature of Microsoft's business.⁵⁴ Nor did Motorola know how any Microsoft patents might apply to Motorola products.⁵⁵ Indeed, Mr. Gutierrez testified that, in a typical Microsoft license negotiation, Microsoft does not have non-public information about the other party to the negotiations.⁵⁶ Moreover, there is no evidence that Motorola was aware of the arguments made by Microsoft during the hearing as to

⁵² RAND Order, pp. 7-8.

⁵³ Dailey Dep., pp. 30, 33.

⁵⁴ Trial Transcript, Day 6, pp. 118-121 (Dailey).

⁵⁵ Dailey Dep., pp. 29.

⁵⁶ Gutierrez Dep. II (rough), pp. 124-125.

the relative unimportance of the Motorola technologies to the standards, both in a technical sense and relative to other contributors to the standards.

- 65. As discussed above, parties to a license negotiation may have particular preferences about the terms and conditions of the license agreement, including but not limited to the structure of the licensing fees. At the time it made its initial offer, Motorola was not aware of Microsoft's preferences regarding these issues.⁵⁷
- 66. Furthermore, as of October 2010, Motorola had no experience licensing its 802.11 and H.264 SEP portfolios on a standalone basis. More generally, its licensing experience was in hardware, not software. As discussed above, at that time, Wi-Fi functionality had only recently been widely incorporated into smartphones and sales of smartphones had only recently started growing rapidly. As of October 2010, Motorola's 802.11 and H.264 SEP portfolios had not been separately licensed.

to break out a separate royalty rate for the 802.11 and H.264 SEP portfolios in these agreements, and they do not cover software. ⁵⁹ Accordingly, Motorola had no past experience on which it could draw when it attempted to negotiate a RAND license with Microsoft. This is in direct

⁵⁷ Dailey Dep., pp. 39-40.

Motorola Mobility, Inc.'s Supplemental Written Responses to Topics 11-12 of Microsoft's Third Amended 30(b)(6) Notice of Deposition, Exhibit E.

⁵⁹ The Court reached a similar conclusion with respect to the Motorola-RIM license. RAND Order ¶¶ 425-429.

contrast to the situation with its cellular SEP portfolio, which Motorola had licensed many times to many licensees by October 2010.⁶⁰

67.	The absence of any past experience with a particular type of licensing situation is
common in si	ituations where a licensor is licensing patents for the first time or for the first time ir
a new industr	ry. In fact, Mr. Gutierrez testified that
	61

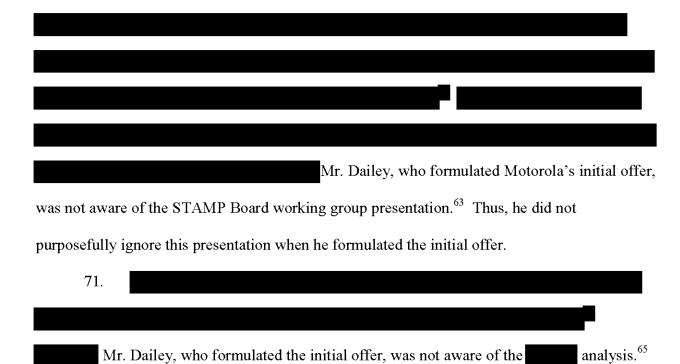
- 68. Motorola had ultimately declined to participate in the MPEG LA H.264 patent pool and did not participate in the Via Licensing pool, presumably in both cases because it thought its patents were more valuable than the average patent in the respective pools.

 Accordingly, as of October 2010, it would have been reasonable for Motorola not to consider these patent pools as a useful benchmark for a royalty rate in a RAND license for its patents.
- 69. The outcome of the 2003 Proxim litigation may have indicated to Motorola that its initial offer of 2.25% was reasonable. In that litigation, Motorola (then Symbol) had been awarded reasonable royalties at a 6% royalty rate.



⁶⁰ Even with Motorola's cellular patent licenses, comparing one license to another is difficult given their complexity and differences between them in terms of royalty structures, the value of the patents being cross licensed to Motorola, other types of consideration, and the characteristics of the licensee's business, among other things. However, while the final agreement differed widely across licensees, Motorola consistently used 2.25% as its opening offer.

⁶¹ Gutierrez Dep. II (rough), pp. 120-121.



Thus, he did not purposefully ignore this analysis when he formulated the initial offer.

- B. Motorola Formulated Its Opening Offers Under the Expectation There Would Be Further Negotiation and on the Basis of Expediency
- 72. Given the lack of information available prior to the October letters, Motorola reasonably would have expected that subsequent negotiations would have brought forth more information, particularly given that Microsoft had invited Motorola to engage in negotiations regarding a broad patent license. In particular, Motorola would have expected Microsoft to present arguments regarding Microsoft patents that Motorola would want to cross license (including those Microsoft had already asserted in litigation), the importance (or lack thereof) of

⁶² MOTO-MS-000237724-48 at 38 and 47.

⁶³ Dailey Dep., p. 68

⁶⁴ RAND Order, p. 196.

⁶⁵ Dailey Dep., pp. 66-67

⁶⁶ Dailey Dep., p. 81; Gutierrez Dep. II (rough), p. 76.

each company's technologies to the standards, the importance of each company's technologies to the other's products, and information regarding the nature of Microsoft's business.⁶⁷

- 73. The October letters did not contain anywhere near the full set of terms and conditions that are typical of Motorola's licenses. This is further evidence that Motorola intended and expected to have further and continued discussions with Microsoft, again as Microsoft had suggested the parties should do.
- 74. In my experience, it is customary for a potential licensee to acknowledge receipt of an offer letter and then offer to further discuss a potential license. This is especially true in the case of sophisticated companies with substantial licensing experience and groups devoted to licensing such as Motorola and Microsoft. Indeed, Mr. Gutierrez testified that

75. At the outset of a negotiation where relatively little information is available, but it is expected that negotiations will continue and reveal additional information, the party making the opening offer has little incentive to put much effort into formulating the opening offer because, there is little chance that the opening offer will be accepted or even play a significant role in the ultimate outcome. This is particularly true in a situation where this party has a large number of licensing opportunities, but limited resources, as was the case with Motorola. This is also true where, as here, a party has already been sued for patent infringement by the other

⁶⁷ Dailey Dep., pp. 24, 29

⁶⁸ Gutierrez Dep. II (rough), p. 126.

⁶⁹ Dailey Dep., p. 93

party, as Motorola unexpectedly had been, so that the negotiation is expected to be of long duration and closely fought.

- Microsoft in October 2010, Motorola defaulted to the standard opening offer of 2.25% on the end product that it had long used successfully when negotiating licenses to its cellular SEP portfolio. While this opening offer is outside the RAND royalty ranges for Motorola's 802.11 and H.264 SEP portfolios that have been determined by the Court, Motorola was operating at that point in the negotiation on the basis of substantially less information, as well as an expectation that the negotiation would continue⁷¹, and thus resorted to its customary default offer. Motorola had not been prepared for in-depth cross-licensing discussions when Microsoft unexpectedly filed its lawsuit on October 1, 2010, and thus had to start from scratch to quickly identify its patents to Microsoft (at Microsoft's request). However, defaulting to its custom when making an opening offer, particularly given the particular situation in which Motorola found itself, does not constitute a lack of good faith.
- 77. Moreover, Motorola would not have reasonably expected to affect, through its opening offers, Microsoft's willingness to pay a royalty for the Motorola portfolios. Microsoft is a sophisticated company, with its own large patent portfolio, extensive knowledge of technology, substantial experience in licensing, deep financial resources, and the recourse of bringing a lawsuit such as this one. Indeed, Microsoft's licensing witness, Mr. Gutierrez, testified that

⁷⁰ Dailey Dep., p. 25; Kowalski Dep., pp. 20-21

In negotiating its various cellular license agreements, Motorola has demonstrated substantial flexibility, having agreed to many different types of licensing fee structures, such as lump sum royalties, running royalties with per unit caps, running royalties with an overall annual cap, as well as other forms of consideration.

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C. By Filing the Lawsuit, Microsoft Ended the Negotiation and Prevented a RAND License From Being Negotiated

- 78. As noted above, after receiving the opening offers from Motorola, Microsoft filed this lawsuit without making any counter-offer or otherwise engaging in negotiation. Thus, Microsoft effectively ended the negotiation.
- 79. To the extent that Microsoft is claiming that, in subsequent negotiations, Motorola would not have moved off its opening offer or would otherwise have refused to negotiate in good faith after making its opening offers, Microsoft's own action in filing this lawsuit before letting the negotiation play out has prevented us from obtaining a direct answer to that question.

 Microsoft could have negotiated further and brought the lawsuit if, after a good faith effort, it still believed Motorola was not negotiating in good faith. However, given the abbreviated negotiation that took place (as a result of Microsoft's filing of the lawsuit), it is speculative for Microsoft now to claim that Motorola would not have ultimately agreed to a royalty in the RAND royalty range determined by the Court (assuming Microsoft brought forth the arguments and information that it did in this litigation).

D. Addressing Microsoft's Claims

80. Microsoft makes a number of claims in its Answer to Interrogatory No. 3. I have addressed a number of those claims above. Here, I address other of Microsoft's claims that have economic content.

⁷² Gutierrez Dep. II (rough), p. 127.

The is notable that Microsoft misinterpreted Motorola's initial offer, apparently believing that the offered 2.25% royalty rate applied after accounting for Microsoft's patent (Gutierrez Dep., p. 31). Microsoft's understanding would have been corrected had negotiations continued.

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- 81. Microsoft appears to believe that Motorola had an obligation, before it ever made the initial offer, to determine Microsoft's bargaining position and then bargain against itself and lower the royalty rate in the initial offer accordingly. For example, Microsoft asserts that Motorola should have taken into account royalty stacking, presumably by considering the full set of patents, owned by various patent owners, that might be standard-essential. I do not agree that Motorola has a responsibility to conduct this analysis before making an initial offer. Instead, the royalty stacking argument is one that would most likely benefit Microsoft. It is Microsoft's responsibility to form its own arguments and persuade Motorola of its positions by way of negotiation. Microsoft certainly has the experience, resources, and ability to do so. However, it chose not to negotiate and instead bring this lawsuit.
- 82. Similarly, Microsoft claims that Motorola should have performed analyses of various issues, such as the value of its patents as compared to other SEPs, before making the initial offer.⁷⁵ However, for the reasons discussed above, I do not agree that Motorola had such an obligation. In fact, Microsoft's licensing witness testified that Microsoft itself did not perform any such analyses before bringing this lawsuit.⁷⁶
- 83. Along the same lines, Microsoft claims that, before making the initial offer, Motorola should have prepared claim charts to demonstrate that all of its claimed standard-essential patents were, in fact, standard-essential.⁷⁷ However, it is not common in my experience

Microsoft Corporation's May 21, 2013 Supplemental Answer to Interrogatory No. 3, pp. 14, 15.

Microsoft Corporation's May 21, 2013 Supplemental Answer to Interrogatory No. 3, pp. 14, 16.

⁷⁶ Gutierrez Dep., pp. 143-144.

Microsoft Corporation's May 21, 2013 Supplemental Answer to Interrogatory No. 3, pp. 13, 15.

for the owner of a patent portfolio to make claim charts for every one of its patents prior to a negotiation. Doing so prior to each negotiation is particularly unnecessary in the case of SEPs because the patents have already been determined by the patent owner to be essential. Moreover, I understand that, regardless of whether claim charts were prepared, it was not Motorola's practice to reach out to a potential licensee unless Motorola thought that the potential licensee was actually using Motorola's patents. In particular, when Motorola was aware that a potential licensee was offering products compliant with a particular standard, Motorola would have a reasonable basis to approach the potential licensee about licensing Motorola's patents essential to that standard.

84. Microsoft claims that Motorola was failing to negotiate in good faith by extending the initial offers in the October letters for only 20 days.⁸¹ However, Mr. Dailey testified that including such a term in an offer letter was standard practice and that he fully expected Microsoft to respond with further negotiation rather than bringing this lawsuit.⁸²

IX. CONCLUSION

85. Based on the foregoing, I conclude that Motorola sent the initial offer letters in October 2010 in good faith.

Gregory K. Leonard

Anx 21

⁷⁸ Gutierrez Dep. II (rough), p. 55.

⁷⁹ Blasius Dep. (Rough), pp. 29-30.

⁸⁰ Blasius Dep. (Rough), pp. 29-30.

Microsoft Corporation's May 21, 2013 Supplemental Answer to Interrogatory No. 3, p. 11.

⁸² Trial Transcript, Day 6, p. 76 (Dailey).

Dated: May 29, 2013

EXHIBIT A

GREGORY K. LEONARD

Gregory K. Leonard is a Partner at Edgeworth Economics specializing in applied microeconomics and econometrics.

Dr. Leonard has written widely in the areas of antitrust, industrial organization, econometrics, intellectual property, class certification, and labor economics. His publications have appeared in the RAND Journal of Economics, the Journal of Industrial Economics, the Journal of Econometrics, the International Journal of Industrial Organization, the Journal of Public Economics, Annales Economie et de Statistique, the Journal of Labor Economics, the International Journal of the Economics of Business, Antitrust Law Journal, Antitrust, Antitrust Source, the Journal of Economic Analysis & Policy, Journal of Competition Law and Economics, the Journal of Economic Surveys, 法学家 (Jurists' Review), Antitrust Chronicle, the Berkeley Technology Law Journal, the Columbia Science and Technology Law Review, the European Competition Law Review, les Nouvelles, Landslide, Managing Intellectual Property, Legal Issues of Economic Integration, Kokusai Shoji Houmu (International Business Law and Practice), and the George Mason Law Review. Dr. Leonard co-authored two chapters in the American Bar Association Section of Antitrust Law (ABA) volume Issues in Competition Law and Policy, co-authored the "Econometrics and Regression Analysis" chapter of the ABA volume Proving Antitrust Damages, and was a contributor to the ABA volume Econometrics. He co-edited Economic Approaches to Intellectual Property: Policy, Litigation, and Management and authored or co-authored three of its chapters. One of these chapters (co-authored with Lauren J. Stiroh) was cited by the Court of Appeals for the Federal Circuit in its *Uniloc* decision. Dr. Leonard is a Senior Editor of the *Antitrust* Law Journal and a co-editor of the ABA Section of Antitrust Law Economics Committee newsletter, and has served as a referee for numerous economics journals.

Dr. Leonard was invited to speak on merger simulation at the 2004 US Department of Justice and Federal Trade Commission (FTC) Merger Workshop, the econometrics of evaluating competition in local retail markets at the 2008 FTC Retail Mergers Workshop, and the calculation of patent damages at the 2009 FTC Hearings on the Evolving IP Marketplace. The 2011 FTC report resulting from the latter hearings cited Dr. Leonard extensively. In 2005, Dr. Leonard served as a consultant on the issue of immunities and exemptions to the Antitrust Modernization Commission (AMC), which was tasked by Congress and the President with developing recommendations for changes to the US antitrust laws. He testified before the AMC in December 2005.

Dr. Leonard has extensive experience with international antitrust and intellectual property issues, particularly in Asia. He has given invited presentations at the Anti-Monopoly Bureau of China's Ministry of Commerce (MOFCOM), the Supreme People's Court of China, Renmin University, the Chinese Academy of Social Sciences, and the University of Political Science and Law. He was a member of ABA and US Chamber of Commerce delegations to joint workshops with the Chinese antitrust agencies, MOFCOM, NDRC, and SAIC, and served on the working groups of the ABA's Sections of Antitrust Law and International Law that prepared comments on MOFCOM's and SAIC's draft regulations. Dr. Leonard has also given presentations to the Japan Fair Trade Commission and the India Competition Commission.

Dr. Leonard has experience in a broad range of industries, including pharmaceuticals, telecommunications, airlines, semiconductors, hedge funds, securities, commercial and recreational fishing, medical devices, professional sports,

credit card networks, payment systems, information services, computer software, computer hardware, chemicals, plastics, flat glass, retailing, advertising, beef processing, fertilizers, printing, petroleum, steel, beer, cereals, cosmetics, athletic apparel, film, milk, canned fish, vitamins, animal feed supplements, tissue, paperboard, industrial gas, concrete, automobiles, contact lens cleaners, sports beverages, soft drinks, diapers, tobacco products, graphite and carbon products, and modems, among others.

Dr. Leonard has provided written and oral testimony and presentations before federal and state courts, government agencies, and arbitration panels on issues involving antitrust, damages estimation, statistics and econometrics, surveys, valuation, and labor market discrimination.

Prior to joining Edgeworth, Dr. Leonard was a Senior Vice President at NERA and Lexecon Inc., a founding member and Director of Cambridge Economics, Inc., and an Assistant Professor at Columbia University, where he taught statistics, econometrics, and labor economics.

Dr. Leonard received an ScB in Applied Mathematics-Economics from Brown University and a PhD in Economics from the Massachusetts Institute of Technology, where he was a National Science Foundation Graduate Fellow and an Alfred P. Sloan Foundation Fellow.

EDUCATION

Massachusetts Institute of Technology

PhD, Economics, 1989 Alfred P. Sloan Foundation Fellowship, 1988-1989 National Science Foundation Graduate Fellowship, 1985-1988

Brown University

ScB, Applied Mathematics-Economics, 1985 Rohn Truell Memorial Premium in Applied Mathematics, 1985

PROFESSIONAL EXPERIENCE

2012-	Partner, Edgeworth Economics
2008-2012	Senior Vice President, NERA Economic Consulting
2004-2008	Vice President, NERA Economic Consulting
2000-2004	Senior Vice President, Lexecon, Inc.
1991-2000	Director, Cambridge Economics, Inc.
1990-1991	Senior Analyst, NERA Economic Consulting

1989-1990 Assistant Professor, Columbia University (Teaching Areas: Econometrics, Statistics, Labor Economics)

PAPERS AND PUBLICATIONS

"A Proposed Method for Measuring Competition Among Imperfect Substitutes," *Antitrust Law Journal* 60, 1992, pp. 889-900 (with J. Hausman and D. Zona).

"Issues in the Contingent Valuation of Environmental Goods: Methodologies for Data Collection and Analysis," in *Contingent Valuation: A Critical Assessment*, Ed. by J. A. Hausman, North Holland Press, 1993 (with D. McFadden).

"Assessing Use Value Losses Due to Natural Resource Injury," in *Contingent Valuation: A Critical Assessment*, ed. by J. A. Hausman, North Holland Press, 1993 (with J. Hausman and D. McFadden).

"Does Contingent Valuation Measure Preferences? Experimental Evidence," in *Contingent Valuation: A Critical Assessment*, ed. by J. A. Hausman, North Holland Press, 1993 (with P. Diamond, J. Hausman, and M. Denning).

"Competitive Analysis with Differentiated Products," *Annales d'Economie et de Statistique* 34, 1994, pp. 159-180 (with J. Hausman and D. Zona).

"A Utility Consistent, Combined Discrete Choice and Count Data Model: Assessing Recreational Use Losses Due to Natural Resource Damage," *Journal of Public Economics* 56, 1995, pp. 1-30 (with J. Hausman and D. McFadden).

"Market Definition Under Price Discrimination," *Antitrust Law Journal* 64, 1996, pp. 367-386 (with J. Hausman and C. Vellturo).

"Achieving Competition: Antitrust Policy and Consumer Welfare," World Economic Affairs 1, 1997, pp. 34-38 (with J. Hausman).

"Economic Analysis of Differentiated Products Mergers Using Real World Data," George Mason Law Review 5, 1997, pp. 321-346 (with J. Hausman).

"Superstars in the NBA: Economic Value and Policy," *Journal of Labor Economics* 15, 1997, pp. 586-624 (with J. Hausman).

"Efficiencies From the Consumer Viewpoint," George Mason Law Review 7, 1999, pp. 707-727 (with J. Hausman).

"Documents Versus Econometrics in Staples," contributed to <u>www.antitrust.org</u>, also available at <u>www.nera.com</u> (with J. Hausman).

"The Competitive Effects of a New Product Introduction: A Case Study," *Journal of Industrial Economics* 30, 2002, pp. 237-263 (with J. Hausman).

"Does Bell Company Entry into Long-Distance Telecommunications Benefit Consumers?" Antitrust Law Journal 70, 2002, pp. 463-484 (with J. Hausman and J. G. Sidak).

"On Nonexclusive Membership in Competing Joint Ventures," RAND Journal of Economics 34, 2003 (with J. Hausman and J. Tirole).

"Correcting the Bias When Damage Periods are Chosen to Coincide With Price Declines," *Columbia Business Law Review*, 2004, pp. 304-306 (with D. Carlton).

"Competitive Analysis Using a Flexible Demand Specification," *Journal of Competition Law and Economics* 1, 2005, pp. 279-301 (with J. Hausman).

"Using Merger Simulation Models: Testing the Underlying Assumptions," *International Journal of Industrial Organization* 23, 2005, pp. 693-698 (with J. Hausman).

"Application of Empirical Methods in Merger Analysis," report to the Fair Trade Commission of Japan, June 27, 2005 (with C. Dippon and L. Wu).

"A Practical Guide to Damages," in *Economic Approaches to Intellectual Property, Policy, Litigation and Management*, ed. by G. Leonard and L. Stiroh, 2005 (with L. Stiroh).

"Applying Merger Simulation Techniques to Estimate Lost Profits Damages in Intellectual Property Litigation," in *Economic Approaches to Intellectual Property, Policy, Litigation and Management*, ed. by G. Leonard and L. Stiroh, 2005.

"Antitrust Implications of Pharmaceutical Patent Litigation Settlements," in *Economic Approaches to Intellectual Property, Policy, Litigation and Management,* ed. by G. Leonard and L. Stiroh, 2005 (with R. Mortimer).

"Framework for Policymakers to Analyze Proposed and Existing Antitrust Immunities and Exemptions," report to the Antitrust Modernization Commission, October 24, 2005 (with D. Bush and S. Ross).

"Real Options and Patent Damages: The Legal Treatment of Non-Infringing Alternatives and Incentives to Innovate," *Journal of Economic Surveys* 20, 2006, pp. 493-512 (reprinted in *Economic and Legal Issues in Intellectual Property*, M. McAleer and L. Oxley, eds., Blackwell Publishing, 2007) (with J. Hausman).

"The Competitive Effects of Bundled Discounts," in *Economics of Antitrust: Complex Issues in a Dynamic Economy*, ed. by L. Wu, 2007.

"Estimation of Patent Licensing Value Using a Flexible Demand Specification," *Journal of Econometrics* 139, 2007, pp. 242-258 (with J. Hausman).

"Patent Damages and Real Options: How Judicial Characterization of Non-Infringing Alternatives Reduces Incentives to Innovate," *Berkeley Technology Law Journal* 22, Spring 2007, pp. 825-853 (with J. Hausman and J. G. Sidak).

"Don't Feed the Trolls," *Ies Nouvelles*, Vol. 42, September 2007, pp. 487-495 (reprinted in *Patent Trolls: Legal Implications*, C.S. Krishna, ed., The Icfai University Press, 2008) (with J. Johnson, C. Meyer, and K. Serwin).

"Are Three to Two Mergers in Markets with Entry Barriers Necessarily Problematic?" *European Competition Law Review* 28, October 2007, pp. 539-552 (with N. Attenborough and F. Jimenez).

"Economics and the Rigorous Analysis of Class Certification in Antitrust Cases," *Journal of Competition Law and Economics* 3, 2007, pp. 341-356 (with J. Johnson).

"Assessing the Competitive Effects of a Merger: Empirical Analysis of Price Differences Across Markets and Natural Experiments," *Antitrust*, Fall 2007, pp. 96-101 (with L. Wu).

"Incentives and China's New Antimonopoly Law," Antitrust, Spring 2008, pp. 73-77 (with F. Deng).

"Use of Simulation in Competitive Analysis," in *Issues in Competition Law and Policy*, ed. by W. Dale Collins, 2008 (with J.D. Zona).

"Allocative and Productive Efficiency," in *Issues in Competition Law and Policy*, ed. by W. Dale Collins, 2008 (with F. Deng).

"In the Eye of the Beholder: Price Structure as Junk Science in Antitrust Class Certification Proceedings," *Antitrust*, Summer 2008, pp. 108-112 (with J. Johnson).

"Merger Retrospective Studies: A Review," Antitrust, Fall 2008, pp. 34-41 (with G. Hunter and G. S. Olley).

"Roundtable Discussion: Developments—and Divergence—In Merger Enforcement," Antitrust, Fall 2008, pp. 9-27.

"Dispatch From China," Antitrust, Spring 2009, pp. 88-89.

"A Hard Landing in the Soft Drink Market – MOFCOM's Veto of the Coca-Cola/Huiyuan Deal," *Antitrust Chronicle*, April 2009(2) (with F. Deng and A. Emch).

"Predatory Pricing after linkline and Wanadoo," Antitrust Chronicle, May 2009(2) (with A. Emch).

"Farrell and Shapiro: The Sequel," Antitrust, Summer 2009, pp. 14-18 (with M. Lopez).

"掠夺性定价—美国与欧盟的法律及经济学分析" ("Predatory Pricing - Economics and Law in the United States and the European Union"), 法学家 (Jurists' Review), 2009, pp. 100-110 (with A. Emch).

"Revising the Merger Guidelines: Second Request Screens and the Agencies' Empirical Approach to Competitive Effects," *Antitrust Chronicle*, December 2009(1) (with L. Wu).

"How Private Antitrust Litigation May Be Conducted in China," *Competition Law360*, January 6, 2010 (with F. Deng and W. Tang).

"Merger Screens: Market-Share Based Approaches and 'Upward Pricing Pressure," Antitrust Source, February 2010 (with E. Bailey, G. S. Olley, and L. Wu).

"Minimum Resale Price Maintenance: Some Empirical Evidence From Maryland," *BE Journal of Economic Analysis & Policy* 10, 2010 (with E. Bailey).

"Three Cases Reshaping Patent Licensing Practice," *Managing Intellectual Property*, March 2010 (with E. Bailey and A. Cox).

"Econometrics and Regression Analysis," in *Proving Antitrust Damages: Legal and Economic Issues*, ABA Section of Antitrust (2nd Edition), 2010 (with J. Langenfeld, W. Li, and J. Morris).

"Patent Damages: What Reforms Are Still Needed?," Landslide 2, May/June 2010 (with M. Lopez).

"The Google Books Settlement: Copyright, Rule 23, and DOJ Section 2 Enforcement," *Antitrust*, Summer 2010, pp. 26-31.

"The 2010 Merger Guidelines: Do We Need Them? Are They All We Need?," Antitrust Chronicle, October 2010(2).

"Evaluating the Unilateral Competitive Effects of Mergers Among Firms with High Profit Margins," Antitrust, Fall 2010, pp. 28-32 (with E. Bailey and L. Wu).

"Predatory Pricing in China—In Line With International Practice?," Legal Issues of Economic Integration 37, 2010, pp. 305-316 (with A. Emch).

"What Can Be Learned About the Competitive Effects of Mergers From 'Natural Experiments'?," International Journal of the Economics of Business 18, 2011, pp. 103-107 (with G. S. Olley).

"District Court Rejects the Google Books Settlement: A Missed Opportunity?," Antitrust Source, April 2011.

"Making Sense of 'Apportionment' in Patent Damages," Columbia Science and Technology Law Review 12, pp. 255-271, 2011 (with E. Bailey and M. Lopez).

"Rigorous Analysis of Class Certification Comes of Age," *Antitrust Law Journal* 77, 2011, pp. 569-586 (with J. Johnson).

"Economic Analysis in Indirect Purchaser Class Actions," *Antitrust*, Fall 2011, pp. 51-57 (with F. Deng and J. Johnson).

"Merger Assessment and Frontier of Economic Analyses (4): Empirical Methods in Antitrust Merger Review," Kokusai Shoji Houmu (International Business Law and Practice), Vol. 40, No. 3, 2012, pp. 391-401 (with L. Wu)

"Merger Assessment and Frontier of Economic Analyses (5): Empirical Methods in Antitrust Merger Review," Kokusai Shoji Houmu (International Business Law and Practice), Vol. 40, No. 4, 2012, pp. 557-564 (with L. Wu).

"Merger Assessment and Frontier of Economic Analyses (6): Empirical Methods in Antitrust Merger Review," Kokusai Shoji Houmu (International Business Law and Practice), Vol. 40, No. 5, 2012, pp. 731-739 (with L. Wu).

"A Comparison of the Almost Ideal Demand System and Random Coefficients Logit Models For Use with Retail Scanner Data," NERA Working Paper, 2007 (with F. Deng).

PRESENTATIONS

"Merger Analysis with Differentiated Products," paper presented to the Economic Analysis Group of the US Department of Justice, April 1991 (with J. Hausman and D. Zona).

"Assessing Use Value Losses Due to Natural Resource Injury," paper presented at "Contingent Valuation: A Critical Assessment," Cambridge Economics Symposium, April 3, 1992 (with J. Hausman and D. McFadden).

"Contingent Valuation and the Value of Marketed Commodities," paper submitted to the Contingent Valuation Panel of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, August 12, 1992 (with J. Hausman).

"Economic Analysis of Differentiated Products Mergers Using Real World Data," paper presented to the George Mason University Law Review Antitrust Symposium, October 11, 1996 (with J. Hausman).

"Documents Versus Econometrics in Staples," paper presented to a program of the Economics Committee of the ABA Antitrust Section, September 5, 1997 (with J. Hausman).

Discussant, "New Developments in Antitrust" session, AEA meetings, January 7, 2000.

"In Defense of Merger Simulation," Department of Justice and Federal Trade Commission Merger Workshop, Unilateral Effects Session, February 18, 2004.

Discussant, "Proving Damages in Difficult Cases: Mock Trial & Discussion," NERA Antitrust & Trade Regulation Seminar, July 10, 2004.

"Network Effects, First Mover Advantage, and Merger Simulation in Damages Estimation," LSI Workshop on Calculating and Proving Patent Damages, July 16, 2004.

"Early Exchange of Documents," LSI Workshop on Pre- and Early Stage Patent Litigation, July 23, 2004.

"Lessons Learned From Problems With Expert Testimony: Antitrust Suits," LSI Workshop on Effective Financial Expert Testimony, November 4, 2004.

"Price Erosion and Convoyed Sales," LSI Workshop on Calculating & Proving Patent Damages, January 19, 2005.

"Economic Analysis of Rule 23(b)(3)," LSI Litigating Class Action Suits Conference, June 6, 2005.

"Early Exchange of Documents," LSI Workshop on Pre- & Early-Stage Patent Litigation, July 22, 2005.

"Issues to Consider in a Lost Profits Damages Analysis," Patent Litigation 2005, Practicing Law Institute, September 30, 2005.

"Antitrust Issues in Standard Setting and Patent Pools," Advanced Software Law and Practice Conference, November 3, 2005.

"New Technologies for Calculating Lost Profits," LSI Workshop on Calculating & Proving Patent Damages, February 27, 2006.

"Estimating Antitrust Damages," Fair Trade Commission of Japan, April 21, 2006.

"Economic Analysis of Rule 23(b)(3)," LSI Litigating Class Action Suits Conference, May 11, 2006.

"Permanent Injunction or Damages: What is the Right Remedy for Non-Producing Entities?," San Francisco Intellectual Property Law Association/Los Angeles Intellectual Property Law Association Spring Seminar, May 20, 2006.

"Antitrust Enforcement in the United States" and "Economic Analysis of Mergers," Sino-American Symposium on the Legislation and Practice of Anti-Trust Law, Beijing Bar Association, Beijing, People's Republic of China, July 17, 2006.

"Economic Analysis in Antitrust," Chinese Academy of Social Sciences, Beijing, People's Republic of China, July 20, 2006.

"Issues to Consider in a Lost Profits Damages Analysis," Patent Litigation 2006, Practicing Law Institute, September 26, 2006.

"Comparison of the Almost Ideal Demand System and Random Coefficient Models for Use With Retail Scanner Data," Pacific Rim Conference, Western Economic Association, Beijing, People's Republic of China, January 12, 2007 (with F. Deng).

Discussant, "Applied Economics" Session, Pacific Rim Conference, Western Economic Association, Beijing, People's Republic of China, January 12, 2007.

"Balancing IPR Protection and Economic Growth in China," International Conference on Globalization and the Protection of Intellectual Property Rights, Chinese University of Political Science and Law, Beijing, People's Republic of China, January 20, 2007.

"The Use and Abuse of Daubert Motions on Damages Experts: Lessons from Recent Cases," LSI Workshop on Calculating & Proving Patent Damages, February 27, 2007.

"Will Your Licenses Ever be the Same? Biotechnology IP Strategies," BayBio 2007 Conference, April 26, 2007.

"Tension Between Antitrust Law and IP Rights," Seminar on WTO Rules and China's Antimonopoly Legislation, Beijing, People's Republic of China, September 1, 2007.

"Issues to Consider in a Lost Profits Damages Analysis," Patent Litigation 2007, Practicing Law Institute, September 25, 2007.

Discussant, "Dominance and Abuse of Monopoly Power" Session, China's Competition Policy and Anti-Monopoly Law, J. Mirrlees Institute of Economic Policy Research, Beijing University, and the Research Center for Regulation and Competition, Chinese Academy of Social Sciences, Beijing, People's Republic of China, October 14, 2007.

"Opening Remarks," Seminar on China's Anti-monopoly Law and Regulation on Abuse of Intellectual Property Rights, Beijing, People's Republic of China, April 26, 2008.

"Issues to Consider in a Reasonable Royalty Damages Analysis," Patent Litigation 2008, Practicing Law Institute, October 7, 2008.

"Econometric Evaluation of Competition in Local Retail Markets," Federal Trade Commission and National Association of Attorneys General Retail Mergers Workshop, December 2, 2008

"Merger Review Best Practices: Competitive Effects Analysis," International Seminar on Anti-Monopoly Law: Procedure and Substantive Assessment in Merger Control, Beijing, People's Republic of China, December 15-17, 2008.

"The Use of Natural Experiments in Antitrust," Renmin University, Beijing, People's Republic of China, December 18, 2008.

"China's Antimonopoly Law: An Economist's Perspective," Bloomberg Anti-Monopoly Law of China Seminar, January 29, 2009.

Panelist, "Standards for Assessing Patent Damages and Their Implementation by Courts," FTC Hearings on the Evolving IP Marketplace, February 11, 2009.

"Economic Analysis of Agreements Between Competitors" and "Case Study: FTC Investigates Staples' Proposed Acquisition of Office Depot," Presentation to Delegation of Antitrust Officials from the People's Republic of China, Washington, DC, March 23, 2009.

"Reasonable Royalties in the Presence of Standards and Patent Pools," LSI Workshop, April 20, 2009.

Presentations on Unilateral Effects, Buyer Power, and the Intellectual Property-Antitrust Interface to Delegation from the Anti-Monopoly Bureau of MOFCOM of the People's Republic of China, Washington, DC, May 10-11, 2009.

Panelist, "The Use of Economic and Statistical Models in Civil and Criminal Litigation," Federal Bar Association, San Francisco, May 13, 2009.

"Trends in IP Rights Litigation and Economic Damages in China," Pursuing IP in the Pacific Rim, May 14, 2009.

Presentation on the Economics of Antitrust, National Judicial College of the People's Republic of China, Xi'an, People's Republic of China, May 25-26, 2009.

"Case Study: The Use of Economic Analysis in Merger Review," Presentation to the Anti-Monopoly Bureau of MOFCOM, Beijing, People's Republic of China, May 27, 2009.

"Economics and Antitrust Law," China University of Political Science and Law, Beijing, People's Republic of China, September 21, 2009.

"Case Study: Economic Analysis of Coordinated Interaction," Presentation to the Anti-Monopoly Bureau of MOFCOM, Beijing, People's Republic of China, September 22, 2009.

"Relevant Market Definition," 4th Duxes Antitrust Law Seminar, Beijing, People's Republic of China, September 26, 2009.

"Expert Economic Testimony in Antitrust Litigation," Supreme People's Court, Beijing, People's Republic of China, February 2, 2010.

"New Case Law for Patent Damages," Law Seminars International Telebriefing, April 28, 2010.

"China/India: Sailing in Unchartered Waters: Regulating Competition in the Emerging Economies – New Laws, New Enforcement Regimes and No Precedents," The Chicago Forum on International Antitrust Issues, Northwestern University School of Law Searle Center, May 20, 2010.

"Antitrust and Intellectual Property," Supreme People's Court, Beijing, People's Republic of China, May 26, 2010.

"Cartel Enforcement Trends in the United States," 2nd Ethical Beacon Anti-Monopoly Summit, Beijing, People's Republic of China, May 27, 2010.

Panelist, "The Future of Books and Digital Publishing: the Google Book Settlement and Beyond," 2010 American Bar Association Annual Meeting, August 7, 2010.

"Coordinated Effects" and "Non-Horizontal Mergers," Presentations to Delegation from India Competition Commission, US Chamber of Commerce, Washington, DC, October 26, 2010.

"UPP and Merger Simulation," Annual Conference of the Association of Competition Economics, Norwich, UK, November 11, 2010.

"Uniloc v. Microsoft: A Key Ruling For Patent Damages," Law Seminars International Telebriefing, January 21, 2011.

"Correlation, Regression, and Common Proof of Impact," New York City Bar Association, January 19, 2011.

"Private Litigation Under China's New Antimonopoly Law," Bar Association of San Francisco, February 17, 2011.

"Competition Law and State Regulation: Setting the Stage and Focus on State-Owned Enterprises," Competition Law and the State: International and Comparative Perspectives, Hong Kong, People's Republic of China, March 18, 2011.

Panelist, "Booking it in Cyberspace: The Google Book Settlement and the Aftermath," American Intellectual Property Law Association, San Francisco, May 13, 2011.

"Econometric Estimation of Cartel Overcharges," ZEW Conference on Economic Methods and Tools in Competition Law Enforcement, Mannheim, Germany, June 25, 2011.

Panelist, "Antitrust and IP in China," Antitrust and IP in Silicon Valley and Beyond, American Bar Association and Stanford University, Palo Alto, October 6, 2011.

Panelist, University of San Diego School of Law Patent Law Conference: The Future of Patent Law Remedies, January 18, 2013.

PROFESSIONAL ACTIVITIES

Member, American Economic Association

Member, Econometric Society

Member, American Bar Association

Contributor, <u>www.antitrust.org</u>

Contributor, ABA Section of Antitrust Law, Econometrics, 2005

Associate Editor, Antitrust, 2007-2010

Senior Editor, Antitrust Law Journal, 2012-; Associate Editor, 2010-2012

Co-Editor, ABA Section of Antitrust Law Economics Committee Newsletter, 2009-

Member, Economics Task Force, ABA Section of Antitrust Law, 2011-2012

Member, ABA Delegation to International Seminar on Anti-Monopoly Law: Procedure and Substantive Assessment in Merger Control, Beijing, People's Republic of China, December 15-17, 2008

Member, Working Group for drafting the "Joint Comments of the American Bar Association Section of Antitrust Law and Section of International Law on the MOFCOM Draft Guidelines for Definition of Relevant Markets," 2009

Member, Working Group for drafting the "Joint Comments of the American Bar Association Section of Antitrust Law and Section of International Law on the SAIC Draft Regulations on the Prohibition of Acts of Monopoly Agreements and of Abuse of Dominant Market Position," 2009.

Member, Working Group for drafting the "Joint Comments of the American Bar Association Section of Antitrust Law and Section of International Law on the SAIC Draft Regulations on the Prohibition of Acts of Monopoly Agreements and of Abuse of Dominant Market Position," 2010.

Referee: Econometrica, Review of Economics and Statistics, International Journal of Industrial Organization, Review of Industrial Organization, Journal of Sports Economics, Journal of Environmental Economics and Management, Research in Law and Economics, Labour Economics, Eastern Economic Journal, Journal of Forensic Economics, Antitrust, Antitrust Law Journal, Journal of Competition Law and Economics, Advances in Econometrics.

DEPOSITIONS, REPORTS, AND TESTIMONY

Mark Abdu-Brisson, et al. v. Delta Air Lines and ALPA, US District Court for the Southern District of New York, 1996 (Report, Deposition).

Polar Air Cargo v. AFL Air Cargo, US District Court for the Southern District of New York, 1998 (Report).

Maxson Automatic Machinery Company, et al. v. the Washington Trust Company, Superior Court of the State of Rhode Island, 2000 (Affidavit).

MCI Telecommunications Corporation, et al. v. U S WEST Communications, Inc., before the Federal Communications Commission, File No. E-96-25, 2000 (Affidavit).

Sprint Communications Company L.P. v. U S WEST Communications, Inc., before the Federal Communications Commission, File No. E-95-42, 2000 (Affidavit).

AT&T v. U S WEST Communications, Inc., Arbitration, 2000 (Report).

RDV Sports, Inc. v. Logo Connections, Inc., US District Court for the Middle District of Florida, Orlando Division, Civil Action No. 99-1346-CV-31B, 2000 (Report).

AT&T v. U S WEST Communications, Inc., before the Federal Communications Commission, File No. E-97-28, 2001 (Affidavit).

MCI Telecommunications Corporation v. U S WEST Communications, Inc., before the Federal Communications Commission, File No. E-97-40, 2001 (Affidavit).

AT&T v. U S WEST Communications, Inc., Arbitration, 2002 (Report, Deposition, Hearing Testimony).

Louie Alakayak, et al. v. All Alaskan Seafoods, et al., Superior Court of the State of Alaska, 1998, 2003 (Report, Deposition, Trial Testimony).

Core Communications, Inc. v. Verizon Maryland, Inc., before the Federal Communications Commission, File No. EB-01-MD-007, 2003 (Declaration).

Davol, Inc. v. Stryker Corporation, United States District Court for the District of Rhode Island, Civil Action No. 01-388T, 2003-2004 (Report, Supplemental Report, Second Supplemental Report, Third Supplemental Report, Deposition).

CSC Holdings, Inc. v. Yankees Entertainment and Sports Network, LLC, American Arbitration Association, Case No. 13 181 02839 03, 2004 (Report, Hearing Testimony).

Viacom, Inc., et al. v. Donald F. Flynn, et al., Circuit Court of Cook County, Illinois, No. 97 CH 3015, 2004 (Report, Deposition).

Hearing Before the Antitrust Modernization Commission, December 1, 2005 (Statutory Immunities and Exemptions).

Joseph V. Kapusta v. Gale Corporation, United States District Court for the Eastern District of California, Case No. CIV-S-03-1232 LKK KJM, 2006 (Report).

Central Valley Chrysler Jeep, Inc. et al. v. Witherspoon, United States District Court for the Eastern District of California, Case No. CIV-F-04-6663 REC LIO, 2006-2007 (Report, Deposition).

Bard Peripheral Vascular, Inc. and David Goldfarb, M.D. v. W.L. Gore & Associates, Inc., United States District Court for the District of Arizona, Case No. CIV-03-0597-PHX-MHM, 2006-2009 (Report, Reply Report, Deposition, Trial Testimony, Declarations, Report on Supplemental Damages, Deposition on Supplemental Damages; Report on Compulsory License, Deposition on Compulsory License).

In re: BULK [EXTRUDED] GRAPHITE PRODUCTS ANTITRUST LITIGATION, United States District Court for the District of New Jersey, Master File No. 02-CV-06030 (WHW), 2006-2007 (Report, Deposition).

Abbott Laboratories, et al. v. Impax Laboratories, Inc., United States District Court for the District of Delaware, C.A. No. 03-120-KAJ, 2006-2008 (Report, Rebuttal Report, Deposition).

Novo Nordisk A/S v. Aventis Pharmaceuticals Inc., Sanofi-Aventis and Aventis Pharma Deutschland GMBH, United States District Court for the District of Delaware, C.A. 05-645-SLR, 2007 (Report, Deposition).

In the Matter of CERTAIN SEMICONDUCTOR CHIPS WITH MINIMIZED CHIP PACKAGE SIZE AND PRODUCTS CONTAINING SAME, before the United States International Trade Commission, Inv. No. 337-TA-605, 2008 (Report, Supplemental Report, Deposition, Trial Testimony).

In the Matter of CERTAIN BASEBAND PROCESSOR CHIPS AND CHIPSETS, TRANSMITTER AND RECEIVER (RADIO) CHIPS, POWER CONTROL CHIPS, AND PRODUCTS CONTAINING SAME, INCLUDING CELLULAR TELEPHONE HANDSETS, before the United States International Trade Commission, Inv. No. 337-TA-543, 2008 (Report, Rebuttal Report, Deposition, Trial Testimony).

Convolve, Inc. and Massachusetts Institute of Technology v. Compaq Computer Corp. and Seagate Technology, LLC, United States District Court for the Southern District of New York, Index No. 00 Civ. 5141 (JSM), 2008 (Report, Deposition).

In re Static Random Access Memory (SRAM) Antitrust Litigation, United States District Court for the Northern District of California, Case No. M:07-cv-1819 CW, 2008 (Report, Deposition).

Venetec International, Inc. v. Nexus Medical, LLC, United States District Court for the District of Delaware, C.A. No. 07-57 (MPT), 2008 (Report, Deposition, Supplemental Report, Second Supplemental Report).

John W. Brantigan v. DePuy Spine, Inc., United States District Court for the Western District of Washington at Seattle, No. C08-0177 RSL, 2009 (Report, Deposition).

Agilent Technologies, Inc. v. Joseph J. Kirkland, et al., Court of Chancery of the State of Delaware, C.A. No. 3512-VCS, 2009 (Report, Deposition, Supplemental Report, Trial Testimony).

Greenberg Traurig v. Gale Corporation, United States District Court for the Eastern District of California, No. 2:07-CV-01572 MCE DAD, 2009 (Report).

In the Matter of CERTAIN SEMICONDUCTOR INTEGRATED CIRCUITS USING TUNGSTEN METALIZATION AND PRODUCTS CONTAINING SAME, before the United States International Trade Commission, Inv. No. 337-TA-648, 2009 (Report, Deposition, Trial Testimony).

Edwards Lifesciences AG and Edwards Lifesciences, LLC v. CoreValve, Inc., United States District Court for the District of Delaware, C.A. No. 08-091 (GMS), 2009-2011 (Report, Deposition, Updated Report, Trial Testimony, Declarations).

WiAV Solutions, LLC v. Motorola, Inc., et al., United States District Court, Eastern District of Virginia, Richmond Division, Civil Action No. 3:09-cv-447-REP, 2010 (Report, Deposition).

In the Matter of CERTAIN NOTEBOOK COMPUTER PRODUCTS AND COMPONENTS THEREOF, before the United States International Trade Commission, Inv. No. 337-TA-705, 2010 (Report, Deposition).

Technology Patents, LLC v. Deutsche Telekom AG, et al., United States District Court, District of Maryland, Civil Action No. 8:07-cv-03012-AW, 2010 (Report).

Hollister Incorporated. v. C.R. Bard, Inc., United States District Court, Northern District of Illinois, Eastern Division, Civil Case No. 10-6427, 2011 (Declaration, Deposition).

Quercus Trust v. LiveFuels, Inc., et al., Superior Court for the State of California, Civil No. 488685, 2011 (Declaration, Report, Deposition).

In re: Budeprion XL Marketing and Sales Practices Litigation, Civil Action 2:09-CV-2811, MDL Docket No. 2017, 2011 (Declaration, Report, Deposition).

In the Matter of CERTAIN COMPONENTS FOR INSTALLATION OF MARINE AUTOPILOTS WITH GPS OR IMU, before the United States International Trade Commission, Investigation No. 337-TA-738, 2011 (Report).

Convolve, Inc. v. Dell Inc., et al., United States District Court, Eastern District of Texas, Marshall Division, Case No. No. 2:08-cv-244, 2011 (Report, Deposition, Declarations, Trial Testimony).

Nicolosi Distributing, Inc. v. BMW of North America, LLC, United States District Court, Northern District for California, Case No. CV-10-3256-SI, 2011 (Report).

In the Matter of CERTAIN WIRELESS COMMUNICATION DEVICES, PORTABLE MUSIC AND DATA PROCESSING DEVICES, COMPUTERS AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-745, 2011 (Report, Deposition).

In the Matter of CERTAIN MOBILE DEVICES, ASSOCIATED SOFTWARE, AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-744, 2011 (Report, Deposition).

Oracle America, Inc. v. Google, Inc., United States District Court, Northern District for California, Case No. 3:10-CV-03561-WHA, 2011 (Declaration, Report, Deposition, Declaration, Supplemental Report, Declaration).

State of Alaska v. Jane Lubchenco, et al., United States District Court for the District of Alaska, Case No. Case No. 3:10-cv-00271-TMB, 2011 (Declaration).

In the Matter of CERTAIN GAMING AND ENTERTAINMENT CONSOLES, RELATED SOFTWARE, AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-752, 2011 (Report, Deposition, Declaration).

General Atomics v. Paul Banks and TetraVue, Inc., Superior Court of the State of California, Case No. 37-2009-00084081-CU-BC-CTL, 2011 (Deposition, Trial Testimony).

Apple Inc., v. Motorola, Inc., United States District Court, Western District of Wisconsin, Case No. 10-CV-662 (BBC), 2011 (Report, Deposition).

Genentech, Inc. and City of Hope v. Glaxo Group, Limited, et al., United States District Court, Central District of California, Western Division, Case No. 2:10-CV-02764-MRP (FMOx), 2011 (Report, Rebuttal Report, Deposition).

In the Matter of CERTAIN HANDHELD COMPUTING DEVICES, RELATED SOFTWARE, AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-769, 2011 (Report, Supplemental Report, Deposition, Trial Testimony).

In the Matter of CERTAIN EQUIPMENT FOR COMMUNICATIONS NETWORKS, INCLUDING SWITCHES, ROUTERS, WIRELESS ACCESS POINTS, CABLE MODEMS, IP PHONES, AND PRODUCTS CONTAINING SAME, before the United States International Trade Commission, Investigation No. 337-TA-778, 2012 (Report, Deposition).

Plantronics, Inc. v. Aliph, Inc., United States District Court for the Northern District of California, San Francisco Division, Case No. C09-01714 BZ, 2012 (Report, Deposition).

Commonwealth Scientific and Industrial Research Organization v. Lenovo, Inc., et al., United States District Court for the Eastern District of Texas, Tyler Division, Case No. 6:09-cv-00400-LED, 2012 (Report, Deposition).

Bayer HealthCare LLC v. Pfizer Inc., United States District Court, Northern District of Illinois, Eastern Division, Civil Action No. 1:12-cv-00630, 2012-2013 (Declaration, Report, Deposition).

L-7 Designs, Inc. v. Old Navy, Inc., United States District Court, Southern District of New York, Civil Action No. 09 Civ. 1432 (DC), 2012 (Report, Deposition).

Apple, Inc. v. Motorola, Inc., United States District Court, Northern District of Illinois, Case No. 11-c-08540, 2012 (Report, Deposition).

ITT Manufacturing Enterprises, Inc. v. Cellco Partnership, et al., United States District Court, District of Delaware, Civil Action No. 09-190-LPS, 2012 (Report, Deposition).

Shelbyzyme LLC v. Genzyme Corporation, United States District Court, District of Delaware, Civil Action No. 09-768 (GMS), 2012 (Report (Damages), Report (Commercial Success), Deposition, Trial Testimony).

In the Matter of CERTAIN DEVICES FOR IMPROVING UNIFORMITY USED IN A BACKLIGHT MODULE AND COMPONENTS THEREOF AND PRODUCTS CONTAINING THE SAME, before the United States International Trade Commission, Investigation No. 337-TA-805, 2012 (Report, Deposition, Trial Testimony).

Rachel Eastman, et al. v. First Data Corporation, et al., United States District Court, District of New Jersey, Case No. 2:10-cv-04860 (WHW) (MCA), 2012 (Report, Deposition).

In the Matter of CERTAIN COMMUNICATIONS EQUIPMENT COMPONENTS THEREOF, AND PRODUCTS CONTAINING THE SAME, INCLUDING POWER OVER ETHERNET TELEPHONES, SWITCHES, WIRELESS ACCESS POINTS, ROUTERS AND OTHER DEVICES USED IN LANs, AND CAMERAS, before the United States International Trade Commission, Investigation No. 337-TA-817, 2012 (Report (Public Interest), Report (Domestic Industry, Bond), Rebuttal Report (Public Interest), Deposition).

Fujitsu Limited v. Belkin, et al., United States District Court, Northern District of California, San Jose Division, Case No. 10-cv-03972-LHK(PSG), 2012 (Report, Deposition, Trial Testimony).

Medivation, Inc. v. The Regents of the University of California, et al., Superior Court of the State of California, Case No. CGC-11-510715, 2012 (Deposition, Declaration, Declaration).

In Re Photochromic Lens Antitrust Litigation (Direct Purchaser Action), United States District Court for the Middle District of Florida, Tampa Division, MDL Docket No. 2173, 2012 (Report, Deposition, Hearing Testimony).

In Re Photochromic Lens Antitrust Litigation (Indirect Purchaser Actions), United States District Court for the Middle District of Florida, Tampa Division, MDL Docket No. 2173, 2012 (Report, Deposition, Hearing Testimony).

In the Matter of CERTAIN PRODUCTS CONTAINING INTERACTIVE PROGRAM GUIDE AND PARENTAL CONTROL TECHNOLOGY, before the United States International Trade Commission, Investigation No. 337-TA-845, 2012 (Report, Deposition, Trial Testimony).

In the Matter of CERTAIN COMPUTERS AND COMPUTER PERIPHERAL DEVICES AND COMPONENTS THEREOF AND PRODUCTS CONTAINING THE SAME, before the United States International Trade Commission, Investigation No. 337-TA-841, 2012-2013 (Report (Domestic Industry, Remedy, Bond), Trial Testimony).

Gemalto SA v. HTC Corporation, et al., United States District Court for the Eastern District of Texas, Tyler Division, Civil Action No. 6:10-CV-561-LED, 2013 (Report, Supplemental Report, Deposition).

Adobe Systems Incorporated v. Wowza Media Systems, LLC, et al., United States District Court for the Northern District of California, Oakland Division, Case No. cv 11-02243, 2013 (Report, Deposition).

In the Matter of CERTAIN AUDIOVISUAL COMPONENTS AND PRODUCTS CONTAINING THE SAME, before the United States International Trade Commission, Investigation No. 337-TA-837, 2013 (Report, Deposition).

Ericsson Inc., et al. v. D-Link Corporation, et al., United States District Court for the Eastern District of Texas, Tyler Division, Civil Action No. 6:10-cv-473, 2013 (Report, Deposition).

Edwards Lifesciences v. Medtronic CoreValve, et al., United States District Court for the District of Delaware, Case No. 12-23 (GMS), 2013 (Report, Deposition).

Intellectual Ventures I LLC v. Trend Micro Incorporated and Trend Micro, Inc. (USA), United States District Court for the District of Delaware, C. A. No. 12-cv-1581-LPS, 2013 (Report).

The Money Suite Company v. Insurance Answer Center, LLC, et al., United States District Court for the Central District of California, Southern Division – Santa Ana, Lead Case No. 11-SACV-01847 AG (JPRx), 2013 (Report, Deposition).

ParkerVision Inc. v. Qualcomm Incorporated, United States District Court for the Middle District of Florida, Jacksonville Division, Case No.: 3:11-cv-719-J-37-TEM, 2013 (Report, Deposition)

SELECTED MERGER EXPERIENCE

R.R. Donnelley/Meredith Burda (1990-1993): Merger of printing companies. Reviewed by the FTC. Preliminary Injunction Hearing. Part III Hearing.

Kimberly-Clark/Scott (1995): Merger of manufacturers of tissue products. Reviewed by the DOJ and the European Commission.

Staples/Office Depot (1996-1997): Proposed merger of office supply retailers. Reviewed by the FTC. Preliminary injunction hearing.

IMC/Western Ag (1997): Merger of mining companies. Reviewed by the DOJ.

Dow/Union Carbide (1999-2001): Merger of chemical manufacturers. Reviewed by the FTC.

Volvo/Scania (2000): Merger of truck manufacturers. Reviewed by the European Commission.

First Data/Concord (2003-2004): Merger of companies involved in merchant acquiring and payment networks. Reviewed by the DOJ.

Bumble Bee/Connors (2004): Merger of canned seafood manufacturers. Reviewed by the DOJ.

Sonaecom/Portugal Telecom (2006): Merger of telecommunications companies. Reviewed by the Portuguese Competition Authority.

Graphic Packaging/Altivity (2007-2008): Merger of paperboard manufacturers. Reviewed by the DOJ.

Inbev/Anheuser-Busch (2008): Merger of beer manufacturers. Reviewed by the DOJ, the UK Competition Commission, and MOFCOM.

Serta/Simmons (2009): Merger of mattress manufacturers. Reviewed by the FTC.

Coty/OPI (2010): Merger of nail polish manufacturers. Reviewed by the DOJ.

Knowles/NXP (2011): Knowles acquired the speaker/receiver business of NXP. Reviewed by MOFCOM.

AT&T/T-Mobile (2011): Consulted for the DOJ regarding the proposed deal between the two wireless service providers.

EXHIBIT B

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7-12-2012 Deposition Video, Transcript and Exhibits of Kirk Daly	
5-9-2012 Rough Deposition Transcript of Jeff Davidson	
4-4-2012 Deposition Video, Transcript and Exhibits of Horacio Gutierrez	
4-4-2012 Deposition Video, Transcript and Exhibits of Timothy Kowalski	
2012-03-28 (D.I. 208) Microsoft's Motion to File Documents Under Seal_[Proposed] Order	
2012-03-28 (D.I. 209) [Filed Under Seal] Microsoft Motion for a Temporary Restraining Order and Prelim Injunction	
2012-03-28 (D.I. 210) [Redacted] Microsoft's Motion for a Temporary Restraining Order and Prelim Injunction	
2012-03-28 (D.I. 211) Declaration of C. Wion ISO Microsoft's Motion for TRO and Prelim Injunction	
2012-03-28 (D.I. 212) [Filed Under Seal] Declaration of Peter Chrocziel	
2012-03-28 (D.I. 213) [Redacted] Declaration of Peter Chrocziel	
2012-03-28 (D.I. 214) [Filed Under Seal] Declaration of Marcelo Prieto	
2012-03-28 (D.I. 214) [Filed Glider Sear] Declaration of Marcelo Prieto	
2012-03-28 (D.I. 215) [Reducted] Declaration of Marcelo Frieto 2012-03-28 (D.I. 216) [Filed Under Seal] Declaration of Josh Hutto	
2012-03-28 (D.I. 210) [Fried Officer Sear] Declaration of Josh Hutto	
2012-04-02 (D.I. 240) Minute Order re Scheduling	
2012-04-05 (D.I. 244) Defendants' Opposition to Msft's Motion for TRO and Prelim Injunction	
2012-04-06 (D.I. 244) Defendants Opposition to Mist's Motion for TRO and Prelim Injunction 2012-04-06 (D.I. 245) Redacted Decl of Grousch ISO Defs' Opp to Msft's Motion for TRO and Prelim Injunction	
2012-04-06 (D.I. 245) Redacted Deci of Grousch ISO Dets' Opp to Wisht's Motion for TRO and Prelim Injunction	
2012-04-06 (D.I. 246) Decl of Kevin Post ISO Defs' Opposition to Msft's Motion for TRO and Prelim Injuction	
2012-04-06 (D.I. 247) Defendants' Motion to File Docs Under Seal ISO Its Opp to Msft's Motion for TRO and Prelim Inj	
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2012-04-06 (D.I. 248) [Filed Under Seal] Defs Opp to Microsoft's Motion for a TRO and Prelim Injunction	
2012-04-06 (D.I. 249) [Filed Under Seal] Bers opp to Microsoft's Motion for a TRO and PI	
2012-04-06 (D.I. 250) [Filed Under Seal] Exhibits 1,3,4,5,6 and 9 to Post Decl re 247 Motion to Seal Defs Docs ISO Its	
Opp to MSFT's Mtn for TRO	
2012-04-09 (D.I. 257) Microsoft's Reply ISO Its Motion for a TRO and Prelim Injuction	
2012-04-10 (D.I. 259) Order	
2012-04-12 (D.I. 261) Order Granting Msft's Motion for a TRO and Post a Security Bond	
2012-04-12 (D.I. 201) Order Granting Mate a Motion to File Docs Under Seal ISO Its Opp to TRO and Prelim Inj	
2012-04-12 (D.i. 202) Order Granting Dets Wolfon to the Docs Order Seariso its Opp to TNO and Trenming	
2012-04-13 (D.I. 265) Notice re Microsoft's TRO Order Bond No. 023019073 w Power of Attorney	
2012-05-14 (D.I. 318) Order Granting Microsoft's Motion for PI and Converts the courts 4-11-12 TRO into PI	
1:10-cv-24063 FAM Motorola v. Microsoft Complaint	
2:10-cv-01577-RSM Microsoft v. Motorola Complaint	
3:10-cv-00699-bbc Motorola v. Microsoft Complaint	
3:10-cv-00700-bbc Motorola v. Microsoft Complaint	
Case: 3:10-cv-00826-bbc Motorola v. Microsoft Complaint	
337-TA-744 Microsoft v. Motorola Complaint	
337-TA-752 Motorola v. Microsoft Complaint	
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Case :C10-01823-JLR 11-14-2012 Trial Transcript	
Case :C10-01823-JLR 11-14-2012 Trial Transcript	
Case :C10-01823-JLR 11-13-2012 Trial Transcript	
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THE COMP IN THE TAX ASSESSED IN	
7-12-2012 Deposition Video, Transcript and Exhibits of Kirk Daly	
Case :C10-01823-JLR 11-19-2012 Trial Transcript	
Case :C10-01823-JLR 11-20-2012	
Case :C10-01823-JLR 12-12-2012 Motorola Trial Transcript Errata	
Case :C10-01823-JLR 12-17-2012 Microsoft Trial Transcript Errata	
10-21-2010 Letter From Motorola to Microsoft	
10-29-2010 Letter From Motorola to Microsoft	
5-14-2013 Rough Deposition Transcript of Brian Blasius	
5-9-2013 Deposition Transcript and Exhibits of Jeff Davidson	
Case :C10-01823-JLR Motorola Admitted Trial Exhibits	
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